

REMARKS

Claims 56-58 and 63-113 are pending in this application. Claims 58, 67-69, 71-93, and 96-113 are canceled herein without prejudice or disclaimer. Claims 94 and 95 are amended herein for clarity to more particularly define the invention. New claims 114-118 are added herein. Support for these amendments and new claims is found in the language of the original claims and throughout the specification. No new matter is added by these amendments and new claims and their entry and consideration are respectfully requested. In light of these amendments and new claims and the following remarks, Applicants respectfully request reconsideration of this application and allowance of the pending claims to issue.

Applicants note with appreciation that claims 56 and 70 are deemed allowed by the Examiner.

I. Rejection under 35 U.S.C. § 112, second paragraph

The Office Action states that claims 80-113 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite.

Claims 80-93 and 96-113 are canceled herein without prejudice or disclaimer, thereby mooting this rejection as it pertains to these claims and Applicants respectfully request its withdrawal.

Claims 94 and 95 are amended herein to delete the recitation of "or absence." In light of this amendment, Applicants believe the rejection has been rendered moot and respectfully request its withdrawal.

II. Rejection under 35 U.S.C. § 112, first paragraph

The Office Action states that claims 80-113 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement.

Claims 80-93 and 96-113 are canceled herein without prejudice or disclaimer, thereby mooting the rejection as it pertains to these claims and Applicants respectfully request its withdrawal.

Claims 94 and 95 are amended herein to delete the recitation of "or absence." In light of this amendment, Applicants believe the rejection has been rendered moot and respectfully request its withdrawal.

III. Rejection under 35 U.S.C. § 112, first paragraph

The Office Action states that claims 58, 67-69, 71-74, and 76-113 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly lacking enablement.

Claims 58, 67-69, 71-74, 76-93, and 96-113 are canceled herein without prejudice, thereby mooting the rejection as it pertains to these claims and Applicants respectfully request its withdrawal.

Claims 94 and 95 are amended herein to recite "genotyping the subject for the presence of a CCR5 haplotype pair HHE/HHE in the subject." Support for the use of the term "genotyping" and a description of the steps employed in carrying out the genotyping assays of this invention is provided throughout both the provisional application and the present application (see, e.g., in the provisional application: the title of the invention; page 18, line 4; the description of Figures 24-29; page 103, line 31; page 106, line 14; page 150, lines 19-24; Example 6 and Example 7 and in the present application: the title of the invention; page 9, line 30; page 80, line 25; page 103, line 32; page 106, line 16; page 119, lines 23-28; page 136, lines 6-29; page 149, line 16 through page 155, line 22). Thus, applicants believe the methods as recited in claims 94 and 95 are adequately enabled and respectfully request the withdrawal of this rejection.

IV. Rejection under 35 U.S.C. § 102(b)

The Office Action states that claims 80-105 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Mummidi et al.

Claims 80-93 and 96-105 are canceled herein without prejudice, thereby mooting the rejection as it pertains to these claims and Applicants respectfully request its withdrawal.

Claims 94 and 95 are amended herein to delete the recitation of "or absence." In light of this amendment, Applicants believe the rejection has been rendered moot and respectfully request its withdrawal.

V. Rejection under 35 U.S.C. § 102(e)

The Office Action states that claims 57, 65, 71, 75, and 80-105 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Kaslow (U.S. Patent No. 6,372,435). With regard to claims 57, 65, 71, 75, 80, 84, 87, 91, 96, 99, 101, and 104, the Action states that Kaslow correlates haplotypes with infection and HIV progression in different racial populations, citing to Table 7; Table 9; Table 11; Figure 3; and column 28, lines 1-9. Action, page 11. The Action states that Kaslow teaches that the P*0101/P*0101 haplotype pair (HHC/HHC) demonstrated association with HIV-1 infection and disease progression in Africans, citing to Table 4; Table 7; Table 9; Table 11; and column 28, lines 1-9. *Id.* With regard to claims 85-105, the Action states that Kaslow inherently teaches detecting the lack of (or absence of) a HHE/HHE haplotype pair.

Claims 71, 75, 80-93, and 96-105 are canceled herein without prejudice, thereby mooting the rejection as it pertains to these claims and Applicants respectfully request its withdrawal.

Regarding claims 57 and 65, Applicants respectfully disagree that Kaslow teaches the method of identifying an African-American human subject as having an *increased risk of accelerated HIV-1 disease progression* by detecting the presence of a CCR5 haplotype pair HHC/HHC, as recited in claim 57. Specifically, upon review of Kaslow, Table 7 shows the distribution of CCR5 genotypes in Africans and Caucasians; Table 9 shows data on the distribution of CCR5 haplotypes in HIV-1 positive Rwandan women with varying rates of disease progression; Table 11 shows the contribution by genetic and non-genetic factors to HIV-

1 infection; and Figure 3 shows the allelic frequencies of CCR5 genotypes. Furthermore, the text in column 28, lines 1-9, of Kaslow, which was specifically cited by the Examiner, states the following.

"Several CCR5 promoter genotypes demonstrated trend for association in either combined groups, probably as a result of ethnically specific effects. For example, the homozygous promoter form P*0103/*0103 was found in 6 (or 2.8%) *HIV-1-infected black individuals but was absent from seronegatives* (OR=5.8, p=0.097). *This relationship was as strong as that recognized earlier for the P*0101/*0101 genotype.*" (Italics added)

Thus, it is applicants' view that neither the above text (which is directed to genotypes associated with HIV infection and does not mention disease progression) nor the tables cited by the Examiner provide any teaching or enabling disclosure of identifying an *increased risk of accelerated HIV-1 disease progression* by detecting the presence of a CCR5 haplotype pair HHC/HHC in an African American, as recited in claim 57. In contrast, what Kaslow does appear to describe is that the genotype P*0101/P*0101 is predictive of an *increased probability of HIV-1 infection* (see; e.g., column 7, lines 40-42; column 11, lines 33-39; column 15, lines 44-48; column 28, lines 3-8; column 33, lines 46-49; column 35, lines 6-9; and claim 13). Furthermore, Kaslow appears to teach away from this haplotype pair having an association with increased risk of accelerated HIV-1 disease progression on the basis of observations made in Kaslow regarding the P*0101 haplotype, as demonstrated by the following statement in column 11, lines 54-60: "Two promoter genotypes (designated P*0201/*0201 and P*0102/*0202) were weakly associated with accelerated disease progression (p=0.072 and 0.058, respectively). In contrast, 2 promoter genotypes involving a common allele P*0101 (P*0101/*0201 and P*0101/*0202) were collectively associated with slower disease progression". Along the same lines, it is further stated in Kaslow in column 35, lines 1-10: "However, the previously recognized relationships between these two CCR5 promoter variants and HIV-1 disease progression almost contradicted their relationships to infection. For example, the 59029G/G (= all combinations involving only P*0101, P*0102, P*0103, and P*0104) was previously associated with slower disease progression (5). In the population cohorts described herein, P*0101/P*0101 (a subset of 5903=29G/G) showed unequivocal relationship to increased risk of infection (Table 8)."

This line of reasoning in Kaslow is noted again in column 14, line 65, through column 15, line 6, wherein it is stated: "...wherein a CCR5 promoter genotype of P*0201/P*0201 or P*0102/P*0202 is predictive of accelerated rate of AIDS progression in the individuals (relative to an individual who does not possess the P*0201/P*0201 or P*0102/P*0201 genotype), wherein a CCR5 promoter genotype of P*0101/P*0201 or P*0101/P*0202 is predictive of a slower rate of AIDS progression in the individual (relative to an individual who does not possess the P*0101/P*0201 or P*0101/P*0202 genotype)." It is also pointed out that the specific haplotype pair, P*0101/P*0101, is not included among the haplotype pairs described in Kaslow as having an association with accelerated HIV disease progression.

Thus, Kaslow does not provide any enabling disclosure of identifying an African American as having an increased risk of accelerated HIV-1 disease progression by detecting the presence of the CCR5 haplotype pair HHC/HHC in the subject. Thus, Kaslow does not anticipate the methods of claims 57 and 65, and Applicants respectfully request the withdrawal of this rejection.

Claims 94 and 95 are amended herein to delete the recitation of "or absence". In light of this amendment, Applicants believe the rejection has been rendered moot with respect to these claims and respectfully request its withdrawal.

VI. Rejection under 35 U.S.C. § 102(b)

The Office Action states that claims 106-108 and 110-112 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Buseyne.

Claims 106-108 and 110-112 are canceled herein without prejudice, thereby mooting the rejection as it pertains to these claims and Applicants respectfully request its withdrawal.

VII. Rejection under 35 U.S.C. § 102(a)

The Office Action states that claims 106-113 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Szalai.

Claims 106-113 are canceled herein without prejudice, thereby mooted the rejection as it pertains to these claims and Applicants respectfully request its withdrawal.

VIII. New claims 114-118

New claim 114 is added herein, reciting a method of identifying an African-American human subject as having an increased risk of accelerated HIV-1 disease progression, comprising genotyping the subject for the presence of a CCR5 haplotype pair in the subject, wherein the haplotype pair is selected from the group consisting of: a) HHC/HHF*1; b) HHC/HHE; c) HHC/HHC; and d) HHC/HHD, whereby the presence of said CCR5 haplotype pair identifies the subject as having an increased risk of accelerated HIV-1 disease progression. New claims 115-118 are dependent from new claim 114.

These new claims incorporate the language of amended claims 94-95 into claim 57 to create claims that parallel claim 57 in the same manner that claims 94 and 95 parallel claims 56 and 70, respectively. Thus, these claims are supported by the language of the original claims and the specification and also as set forth above regarding enabling support for the phrase "genotyping the subject," as presented in amended claims 94 and 95. These claims are believed to be patentable for the same reasons set forth above regarding claims 57 and 63-66 and applicants respectfully request their entry and allowance.

Having addressed all of the issues raised by the Examiner in the pending Office Action, Applicants believe the claims as presented herein are in condition for allowance, which action is respectfully requested. The Examiner is encouraged and invited to contact the undersigned directly, if such contact will expedite the prosecution of the pending claims to issue. In the event that the Examiner fails to find all of the pending claims allowable upon review of the amendments and remarks as presented herein, applicants respectfully request a telephone interview with the Examiner prior to the issuance of any further actions for this application.

The Commissioner is authorized to charge Deposit Account No. 50-0220 in the amount of \$1240.00 (\$790.00 as the fee for a Request for Continued Examination and \$450.00 as the fee for a two month extension of time). This amount is believed to be correct. However, the Commissioner is authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-0220.

Respectfully submitted,

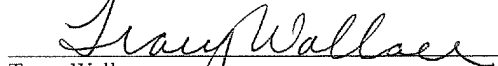


Mary L. Miller
Registration No. 39,303

Customer No. 20792
Myers Bigel Sibley & Sajovec
P. O. Box 37428
Raleigh, North Carolina 27627
Telephone: (919) 854-1400
Facsimile: (919) 854-1401

**CERTIFICATION OF ELECTRONIC TRANSMISSION
UNDER 37 CFR § 1.8**

I hereby certify that this correspondence is being transmitted electronically to the U.S. Patent and Trademark Office on June 19, 2007.


Tracy Wallace
Date of Signature: June 19, 2007